

REMARKS

Claims 1-3, 5-11, and 13-17 stand rejected. Claims 4 and 12 are objected to and are indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicants sincerely thank the Examiner for the indication of allowable subject matter. Claim 2 has been canceled, rendering its rejection moot. Claims 1, 4, 10, 12, and 15 are amended. Claim 1 is amended to recite a polyiron coil form, as recited in as-filed claim 2. Claims 4 and 12 are rewritten in independent form and are now believed to be in condition for allowance. Claims 10 and 15 are amended to recite that the tip radius is a hemispherical radius, not a circular radius. Support for this amendment is found in Fig. 3B. Claims 3, 6-8, 13, and 14 have been amended to correct antecedent basis. These amendments do not add new matter.

Fig. 3B is amended to show the first gold layer, as indicated on page 2 of the Detailed Action. The first gold layer is described in paragraphs [0031] through [0033] of the written description, and in as-filed claims 4 and 12. The amendment to Fig. 3B does not add new matter because Fig. 3B is being conformed to the as-filed written description and claims. Replacement sheet 2/3 of the formal drawings is enclosed.

Rejections under 35 U.S.C. § 102

Claims 1, 3, and 10 stand rejected as being anticipated by U.S. Patent No. 3,812,438 by Hopfer (hereinafter "Hopfer"). Claim 1, as amended, recites, among other elements, a polyiron coil form. Hopfer discloses a cone made of a dielectric material, such as REXOLITE. Polyiron, unlike REXOLITE, absorbs electromagnetic energy at high frequencies (see paragraph [0029]). The polyiron core acts as a lossy element at high frequencies, while not increasing DC resistance through the inductor. Hopfer does not disclose or suggest a polyiron core; therefore, claim 1 is allowable.

Claim 10, which depends from claim 1, recites, as amended, that the integrated contact has a hemispherical radius not greater than 250 microns. Hopfer discloses a "contact radius" of about 0.01 inch or less (Col. 3, line 49); however, the tip is circular (Col. 3, line 38; Fig. 2, ref. num. 54) and not hemispherical, as recited in claim 10. Hopfer creates a planar circular contact that would couple to the underlying ground plane if the

planar contact overhung the center conductor of the microcircuit and undesirably reduce the operating range of the inductor (see paragraph [0015]).

An integrated contact with a hemispherical radius provides a conductive tip surface without substantially increasing the contact area of the tip to the microcircuit (paragraph [0030]). In comparison, the conical metal tip 56 of Hopfer flares outwardly from the circular tip 54. The conical metal portion above the circular tip 54 would overhang a 500 micron center conductor of a microstrip transmission line (see paragraph [0035]), even if it were perfectly aligned to the center conductor, coupling to the ground plane and reducing the resonant frequency and operating range of the inductor. Therefore, claim 10 is further patentable.

Rejections under 35 U.S.C. § 103

Claims 1-3, 5-11, and 13-17 stand rejected as being unpatentable over U.S. Patent No. 6,509,821 by Oldfield (hereinafter "Oldfield") in view of Hopfer. The Examiner states that Oldfield discloses the claimed invention except for an integrated contact, and that it would have been obvious to include an integrated contact in the coil form of Oldfield for the purpose of facilitating connections and surface mounting. The Applicants respectfully traverse.

Claim 1 recites, among other elements, an inductor coil wound around a polyiron coil form. Oldfield states that the wire of his inductor is initially wound around a tapered mandrel (Col. 4, lines 48-50), and then filled with a liquid core material, which is then cured. Oldfield states that the "use of the dielectric in a liquid form during manufacturing allows the dielectric to flow into the smallest winding diameters of the coil where it is the most effective at reducing high frequency resonant loss glitches. The dielectric material after it cures or hardens will then tend to hold the coil together making the coil less susceptible to handling damage" (Col. 4, lines 39-45; see also, Col. 4, lines 56-59). Thus the inductor coil 2 of Oldfield is wound around a tapered mandrel, not around a polyiron coil form. Oldfield does not disclose, and in fact teaches away from, an inductor coil wound around a polyiron coil form.

Furthermore, one would not have been motivated to include an integrated contact in the inductor of Oldfield. First, the inductor of Oldfield has leads at either end of the coil that allow both ends of the coil to be soldered to a microcircuit (see, *e.g.*, Fig. 1C of

the instant application), such as in surface mounting applications. The inductor can be mounted in a hybrid circuit so that its long axis is essentially parallel to the microcircuit. Including an integrated contact would require a substantial redesign of the inductor of Oldfield and interfere with surface mounting and similar applications.

Second, Oldfield states that the core does not extend beyond the small end of the coil (Claim 1, Col. 6, lines 10-11). Not only would the modification urged by the Examiner be contrary to this requirement of the inductor of Oldfield, there is no place to include an operative contact in a coil form that does not extend beyond the end of the coil. Oldfield teaches away from the modification urged by the Examiner and claim 1 and all claims that depend from claim 1 are patentable. Claims 11 and 16, and all claims that depend from claim 11 and from claim 16 are also patentable for at least similar reasons.

Claim 11 and 16 recite a polyiron coil form having a plated tip portion. Hopfer does not disclose a polyiron coil form having a plated tip portion. Hopfer is not an enabling reference for plating a tip portion onto a polyiron coil form. Therefore, claims 11 and 16 are further patentable.

Claims 8 and 14 recite that the inductor coil is wound not more than one turn around the plated portion of the coil form. The Examiner asserts that Hopfer inherently discloses the inductor coil wound not more than one turn around the plated portion of the coil form. The Applicants respectfully traverse.

Obviousness cannot be predicated on what is unknown (*In re Spormann*, 363 F.2 444,150 USPQ 449 (C.C.P.A. 1966). Referring to Fig. 2, Hopfer shows several turns of wire around the metal tip (which includes the contact post shown in dashed lines, as discussed in the Applicants' patent application in paragraph [0014] and [0015], and shown as ref. num. 42 in Fig. 2B). Hopfer does not appreciate the problems arising from wrapping multiple turns of wire around the metal tip, and does not teach why this is to be avoided. Oldfield appears to use insulated wire, otherwise the windings would short to each other. Thus, the Applicants respectfully assert that the combination of Hopfer and Oldfield urged by the Examiner would not inherently result in the inductor of claim 8 or of claim 14. Therefore claims 8 and 14 are further patentable.

The specific features of claims 8 and 14 are not shown in the prior art, and a rejection based on inherent properties is improper. If the Examiner maintains these rejections, the undersigned respectfully requests additional proof from the Examiner or an

affidavit under 37 C.F.R. § 104 with respect to the Examiner's assertion of inherency, in order to preserve the Applicants' opportunity to challenge the correctness of the assertion.

CONCLUSION

The Applicants submit that all claims are now in condition for allowance. Favorable reconsideration and timely issuance of a Notice of Allowance are respectfully requested. Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims, and/or drawings, then it is respectfully asked that such changes be made by an examiner's amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner believes a telephone conference would expedite prosecution of this application, the Examiner is cordially invited to telephone the undersigned at (707) 591-0789.

Respectfully Submitted,



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Amendments to the drawing figures:

Please amend Fig. 3B to include the first gold layer (barrier layer), as indicated by the Examiner in the Detailed Action, and its associated reference numeral.